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# ProductInformation

**Collagen**
**from kangaroo tail**

Product Number **C 1809**
Storage Temperature 2-8 °C

## Product Description

CAS Number: 9007-34-5

This collagen has been tested in culture with mammalian cells to verify it is low in endotoxin content. This collagen is Bornstein and Traub Type I, not to be confused with Sigma's catalog type which is an organizational placeholder. Type I collagen is a component of skin, bone, tendon, and other fibrous connective tissues. It is often used in cell culture as an attachment substratum. Myoblasts, spinal ganglia, hepatocytes, embryonic lung, heart explants, fibroblasts, endothelial cells, and islet cells have been cultured successfully on films or gels of Type I collagen. Type I collagen differs from other collagens by their low lysine hydroxylation and low carbohydrate composition.

Collagen breaks down metabolically in the body to release N-telopeptide, which is the N-terminus of collagen. There is also C-telopeptide, which is presumably the C-terminus. N-telopeptide is released in urine, and its detection in diagnostic tests is used to screen for osteoporosis.

Although different types of collagen exist, they are all composed of molecules containing three polypeptide chains arranged in a triple helical conformation. Slight differencess in the primary structure (amino acid sequence) establish differences between the types. The amino acid sequence of the primary structure is mainly a repeating motif with glycine in every third position and proline or 4-hydroxyproline frequently preceeding the glycine residue.[1,2]

## Precautions and Disclaimer

For Laboratory Use Only. Not for drug, household or other uses.

## Preparation Instructions

This product is an acid soluble collagen. It can be dissolved in water with acetic acid added to pH 3.0 (5 mg/ml), yielding an opalescent, colorless solution.

## Procedure

Acid soluble collagen can be use in gel preparation. The general procedure is as follows:

A collagen solution should be prepared at the concentration of 1.5 - 3 mg/ml in 0.1 M acetic acid. This may require stirring for several hours at room temperature. Sterilization using chloroform is not recommended. The addition of antibiotics and antimycotics may be helpful (Product No. A 9909).

Materials required:
Collagen gel solution 1.5 - 3 mg/ml
10x tissue culture medium containing phenol red
Sodium bicarbonate or HEPES buffer

Procedure:
(The following volumes represent quantities for use in 24 well plates. Volumes can be adjusted to accommodate any culture vessels).

1. Measure out 800 µl of collagen solution.
2. Add 100 µl of 10x medium (buffered with 1x sodium bicarbonate or HEPES).
3. Adjust pH to physiological levels with 1 M sodium hydroxide, if required (100 µl or less).
4. Add 10x medium to bring volume to 1 ml.
5. Mix contents well. Solution should maintain red color to indicate physiological pH.
6. Dispense into wells to a depth of 1-2 mm (approximately 15 µl/well).
7. Transfer to 37 °C for 20-40 minutes.
8. Examine for gel formation.

**References**


1. Tanzer, M. L., Cross-linking of collagen. Science, **180(86)**, 561-566 (1973).
2. Bornstein, P. and Sage, H., Ann. Rev. Biochem., **49**, 959 (1980).


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